Online training resources in occupational safety and health

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Introduction

The internet provides health and safety professionals with unprecedented access to information on occupational health and safety. The internet can also serve as a virtual classroom for electronic learning (e-learning), where webcasts replace traditional didactic lectures and electronic libraries replace hard cover volumes. The continuum of e-learning ranges from simple e-mail correspondence with colleagues to online degree and certificate programmes in occupational health offered by colleges and universities.

The development of human resources is one of the priorities of the WHO Global Strategy on Occupational Health for All (1). E-learning initiatives are important components of Task Force 11 (training programmes and modules) and Task Force 12 (internet resources and networks) of the work plan of the Network of WHO Collaborating Centres in Occupational Health.

As this world-wide web continues to spread around the globe, students in industrialized and developing countries alike can benefit from this expanding range of training opportunities. The internet offers opportunities for collaboration across organizations and borders, timely access to training, and convenience. This review is intended to introduce the occupational health and safety professional to the types of training opportunities available on the internet and to provide examples of relevant forums, portals, web casts and short courses.

Web-based forums

A forum is a web-based discussion board where particular topics are discussed. Users can typically post messages to the entire group. As an example, a user might pose a question: "Has anyone seen cases of pneumoconiosis from exposure to tripoli?" Other viewers respond, and the messages are viewed by the entire group. Most web-based forums have administrators who oversee the content and control who can view, post, or join the group.

An example of a popular web-based forum is Occ-Env-Med-L (http://dmi-www.mc.duke.edu/oem/occ-env-.htm) which was founded and is managed by Duke University Medical Center in the United States. This free forum has over 3,000 subscribers in over 65 countries. Examples of other occupational health forums include OCCENVMED (United Kingdom), HS-Canada, RST-LAC (Latin America), and MediTrav (France).

Portals

A portal, or gateway, is a web-site that offers a broad array of resources and services and is intended to serve as a major starting site or anchor site for users. Portals are designed and maintained by a wide variety of groups, including international organizations, national institutes and centres, academic associations, professional societies, and non-governmental organizations. Users are encouraged to visit these portals to select the ones that best meet their specific needs.

Some portals that are designed to serve international users include the Canadian Centre for Occupational Health and Safety (www.ccohs.org), the European Agency for Safety and Health at Work (http://europe.osha.eu.int/), the International Occupational Safety and Health Information Centre (http://www.ilo.org/public/english/protection/safework/index.htm), and the ILO CIS Centres Network (www.ciscentres.org) (2). In addition, several national institutes provide useful portals to occupational safety and health information and training on the internet. Examples include the U.S. National Institute of Occupational Safety and Health

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(www.cdc.gov/niosh/homepage.html), the Finnish Institute of Occupational Health (www.occuphealth.fi/e/), the French Institut National de Recherche et de Securite (http://www.inrs.fr/), and the Spanish Ministerio de Trabajo y Asuntos Sociales (www.mtas.es/). Portals are also maintained by academic institutions, commercial enterprises, and professional societies. Examples of two professional society portals are the International Commission on Occupational Health (www.icoh.org.sg/) and the American College of Occupational and Environmental Medicine (www.acoem.org/).

Government sources of online training materials

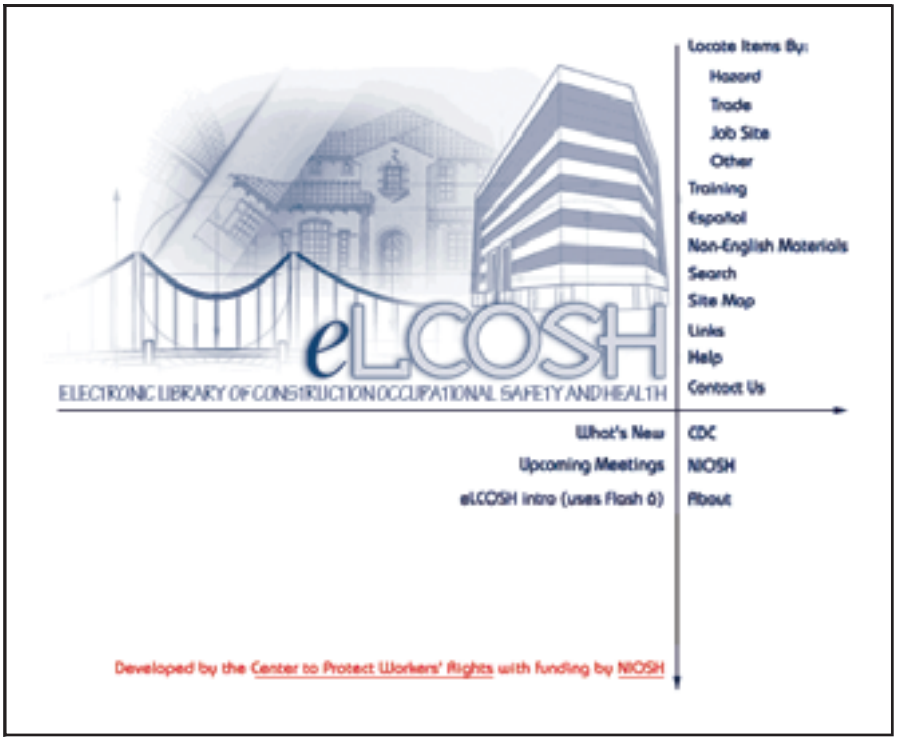
Some national governments fund the development of online training materials which are designed to be in the public domain and are offered free of charge to the user. The U.S. Occupational Safety and Health Administration (www.osha.gov/) website, for example, has an "etools" section that includes downloadable files and slide presentations on a wide variety of occupational safety and health topics. OSHA has also developed training materials for its special emphasis programmes. An excellent example is a series of slides on prevention of silicosis (http://www.osha-slc.gov/Silica/SeventyEight.html). The U.S. Agency for Toxic Substances and Disease Registry has put their toxicology profiles on their website (http://www.atsdr.cdc.gov/toxpro2.html) and the U.S. Environmental Protection Agency has an excellent website for pesticide safety (http://epa.gov/pesticides/safety/index.htm).

The portal of the Canadian Centre for Occupational Health and Safety (www.ccohs.org)

The portal of the International Occupational Safety and Health Information Centre (http://www.ilo.org/safework)

Electronic libraries

Electronic or digital libraries are managed collections of information where the information is stored in digital format. An example of an electronic library is eLCOSH (www.cdc.gov/elcosh/index.html), the electronic library of construction safety and health which was developed by the Center to Protect Worker's Rights with funding from NIOSH. This site provides training materials for construction workers in both English and Spanish.



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Webcasts

A webcast is a non-interactive offering of material, in this case training material, which is provided to the user over the internet. A typical training webcast might include a digital slide presentation which could be accompanied by audio or even video. Several WHO Collaborating Centres in Occupational Health are providing webcasts of lectures by their faculty on their web sites. An example of a webcast on "Ethical Issues in International Collaborative Research" by Dr. Reidar Lie, recorded from a conference on Ethical Issues in Health Research, can be viewed and heard at the Great Lakes Centers web site: (http://www.uic.edu/sph/glakes/global/conferences/sofia2003/).

Case studies

Case studies differ from webcasts in that they deal with cases rather than topics and are designed to be interactive. The U.S. ATSDR has an outstanding collection of case studies dealing with topics in environmental medicine (www.atsdr.cdc.gov/HEC/CSEM). These cases, which are designed primarily for clinicians, offer an excellent introduction to the clinical and public health aspects of specific toxic exposures.

The University of Illinois offers an interactive course in investingating outbreaks of environmental illness called Envirorisk (www.uic.edu/sph/cade/envirorisk).

Electronic journals

The internet offers users free access to bibliographic databases that can include abstracts and even entire journal articles. Two very useful databases for the occupational safety and health professional include the U.S. National Library of Medicine's Medline (http://pubmed.gov) and Toxnet (http://toxnet.nlm.nih.gov). Some publishers now offer entire magazines or journals in digital format. Examples of electronic magazines include the African, Asian-Pacific, Barents, and Estonian Newsletters on Occupational Health and Safety and the WHO Collaborating Centres Network Newsletter (http://www.occuphealth.fi/Internet/English/Information/Electronic+journals/) available through the Finnish Institute of Occupational Health. The archives of journals such as the International Journal of Occupational and Environmental Health can now be viewed online (http://www.ijoeh.com/).

Short courses

Occupational health and safety professionals can also find short courses (few hours in length) on relevant topics on the internet. These courses are often developed with public funding and can be taken free of charge. The U.S. National Library of Medicine has developed a 3-module toxicology course which includes Basic Principles of Toxicology (http://sis.nlm.nih.gov/ToxTutor/Tox1/index.html), Toxicokinetics (http://sis.nlm.nih.gov/ToxTutor/Tox2/index.html), and Cellular Toxicology (http://sis.nlm.nih.gov/ToxTutor/Tox3/index.html). The University of Illinois offers an interactive course in investigating outbreaks of environmental illness called Envirorisk (www.uic.edu/sph/cade/envirorisk).

Online degree and certificate programmes

Several academic institutions around the world now offer students the opportunity to take entire academic courses over the internet on a credit, non-degree basis. Others offer the student the opportunity to complete a series of online courses which lead to a certificate or even a Masters of Public Health degree.

Examples of such institutions include Tulane University and the University of Connecticut in the United States; the University of New Brunswick in Canada; and the University of Manchester in the United Kingdom.

Barriers to e-learning

While the internet offers an expanding array of training opportunities for occupational health and safety professionals, the user should be prepared to encounter several barriers to electronic learning. The majority of available sites are in English which may not be the user's native language. There may be a charge associated with downloading some training materials, and the user should be cognizant of whether or not the material is free of charge. The user may spend hours (or in the case of academic courses, days or weeks) on the internet which can generate phone or access charges. Training materials are often considered as intellectual property by the author, and the user should determine whether these materials are copyright protected and the conditions under which they can be used. Fortunately, many of the training materials developed with public funding are often in the public domain.

Insufficient bandwidth could be a limiting factor in successfully downloading media-rich training materials (e.g. large graphics files or audio or video). Some users prefer to see electronic training materials in printed format; if this is the case, the user should have the technical capability to print these materials. Students who wish to enroll in an academic course should consider whether the material is offered in synchronous or asynchronous time). If the course requires paced learning, the student should consider whether their other obligations, such as their job, allow them to keep pace with the course. Finally, the materials are often of variable quality and, other than viewing the materials or completing the course, the user must rely on the reputation of the author or institution as a measure of quality.

Conclusion

Despite these barriers, the internet offers a wealth of training opportunities to the occupational health and safety professional. The internet is dynamic and is rapidly evolving. New materials are constantly becoming available. The internet connects us to their colleagues around the globe and gives us access to an ever-growing body of digital information on occupational safety and health.

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28 April 2004

ILO World Day for Safety and Health at Work

The World Day for Safety and Health at Work is intended to focus international attention on promoting and creating a safety and health culture at work and to help reduce the number of work-related deaths each year. This year, as in previous years, tripartite events have taken place worldwide. More information is available from this web page: www.ilo.org/safework/safeday.

We have the honour and priviledge to publish in this issue the speech by H. E. Tarja Halonen, President of the Republic of Finland.